(Once amended)   A method of replicating content data stored on a central content server to at least one local content server, comprising the steps of:

determining unused bandwidth on a common link of an access data network carrying subscriber traffic and over which central content server and the at least one local content server communicate; and

transmitting content data stored on the central content server to the at least one local content server substantially on the determined unused bandwidth.

2.   (Once amended)   The method of claim 1, wherein said at least one local content server comprises a server located in a vertical services domain proximate to at least one end user terminal.

5.   (Once amended)   The method of claim 1, wherein:

the local content server is located in a central office that provides Digital Subscriber Line (DSL) service to the at least one end user terminal; and

the central content server is located in a hub site.

6.   (Once amended)   The method of claim 1, comprising the further steps of:

storing the content data transmitted to the at least one local content server on the at least one local content server; and

transmitting the content data stored on the at least one local content server to at least one end user terminal proximate to the at least one local content server.

9.   (Once amended)   The method of claim 6, wherein
the step of transmitting the content data stored on the
at least one local content server to the at least one end
user terminal proximate to the at least one local content
server comprises the steps of:

provisioning a logical communication circuit
extending from the at least one end user terminal through
the network to a communication access node coupled to a
first network domain, at least a portion of the logical
communication circuit extending through the common link,
wherein the provisioning comprises defining the logical
communication circuit in terms of a layer-2 protocol
defining switched connectivity through the network;

at the data switch, examining communicated
information in transmissions from the customer premises,
for a protocol encapsulated within said layer-2 protocol,
to distinguish transmission types;

forwarding each detected transmission of a first
transmission type from the .data switch to the
communication access node over the logical communication
circuit defined in terms of the layer-2 protocol; and

forwarding each detected transmission of a second
type, different from the first transmission type, to a
second network domain logically separate from the first
network domain, wherein the at least one local content
server is coupled to the second network domain to receive
at least one transmission of a second type for control of
the step of transmitting the content data stored on the
at least one local content server to at least one end
user terminal proximate to the at least one local content
server.

10.   (Once amended)   A method as in claim 9, further comprising the steps of:

receiving first downstream transmissions intended for the at least one end user terminal at the data switch, over the logical communication circuit from the first network domain;

receiving second downstream transmissions intended for the at least one end user terminal from the second network domain at the data switch, content data from the at least one local content server; and

inserting the second downstream transmissions into the logical communication circuit, to combine the first and second downstream transmissions for communication over the logical communication circuit from the data switch to the at least one end user terminal.

12.   (Once amended)   The method of claim 1, wherein a part of the bandwidth of the common link is reserved for transmitting the content data stored on the central content server to the at least one local content server to prevent the loss of a session between the central content server and the at least one local content server.

REMARKS

Reconsideration and allowance are respectfully requested. The Office Action allowed claims 18-24, rejected claims 1-6, 9, 12-17, 25, 31-40, 42, 43 and 45, and objected to claims 7, 8, 10, 11, 26-30, 41 and 44. Applicants have amended claims 1-2, 5-6, 9-10 and 12 and cancelled claim 4 without prejudice. Consequently, claims 1-3 and 5-45 are pending upon entry of this Amendment. No new matter has been added.

§ 102 rejection

Claims 1-2, 4, 6, and 12-16 were rejected under 35
U.S.C. § 102(b) in the parent case as being anticipated
by U.S. Patent No. 6,078,582 to Curry et al. ("Curry").
Applicants respectfully traverse this rejection.

Applicants have amended independent claim 1 to
clarify that the inventive method transmits content data
stored on a central content server to at least one local
content server. The Office Action asserted that Curry
teaches "transmitting content data stored on the
[central] content server to at least one [local] content
server substantially on the determined unused bandwidth
(see Figure 10B, col. 13, lines 40-52)." Applicants
respectfully disagree.

Curry does not mention anything about transmitting
content from a central server to any of the ITSs.
Instead, Curry teaches monitoring the bandwidth on a
virtual path between two ITSs, not between the ITS and
the local central office, or any other central server, as
implied by the Office Action (col. 13, lines 10-14 and
lines 38-52). Further, Curry does not even mention
monitoring traffic between a central and a local server.
As shown in Figure 6, all virtual paths between ITSs
travel through one or more routers and do not connect any
ITSs to a central server. Moreover, Curry assumes that
the virtual path between ITSs is the only path requiring
bandwidth monitoring (col. 13, lines 27-52).

Moreover, Curry does not disclose transmitting
content data over unused bandwidth like the claimed
invention. Curry only teaches varying the data rate of
existing traffic based on available bandwidth (col. 13,
lines 41-50) but does not mention anything about seizing
opportunities for utilizing unused bandwidth in

subscriber traffic to transmit content data other than
the subscriber traffic (e.g., data stored on the central
server).

By focusing exclusively on the bandwidth used on a
virtual path between two ITSs and not between the ITS and
any central server, Curry does not disclose or suggest
determining unused bandwidth on a link between the
central content server and the local content server,
Further, because Curry only addresses filling unused
bandwidth by varying the data rate for existing
subscriber traffic and not by transmitting content data
other than the existing traffic over the spare bandwidth,
Curry fails to disclose transmitting content data
substantially on the determined unused bandwidth like the
claimed invention. Withdrawal of the rejection is
therefore respectfully requested.

§ 103 rejections

Claims 3, 5 and 17 under 35 U.S.C. § 103(a) in the
parent case as being unpatentable over U.S. Patent No.
5,790,548 to Sistanizadeh et al. ("Sistanizadeh") in view
of Curry. Applicants respectfully traverse this
rejection.

Claims 3, 5, and 7 depend directly or indirectly on
independent claim 1 and therefore the Office Action fails
to establish a prima facie case of obviousness for the
reasons explained above. The Office Action asserted that
Sistanizadeh discloses a central content server at a hub
site (col. 16, lines 8-16). However, the Office Action
overlooks the fact that Sistanizadeh assumes that only
simple, limited messages following Simple Network
Management Protocol (SNMP) can be transmitted between the
client and the server (col. 15, lines 1-16). This

explicit limitation teaches away from transmitting content data on unused bandwidth because the restrictions in SNMP limit the amount and type of transmitted information.

At best, combining Curry with Sistanizadeh would teach monitoring the bandwidth on paths between clients (not between the client and the server) while ignoring the bandwidth on the client/server path and restricting the traffic along this path. This clearly fails to suggest the claimed invention, which monitors bandwidth between a central and at least one local content server and transmits content data over unused bandwidth. The Office Action therefore fails to establish a prima facie case of obviousness, and withdrawal of the rejection is respectfully requested.

Claims 9, 25, 31-40, 42-43 and 45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Curry in view of Sistanizadeh and further in view of U.S. Patent No. 6,118,785 to Araujo ("Araujo"). Applicants respectfully traverse this rejection. Claim 9 depends on claim 1 and is therefore patentable for the reasons explained above. With respect to independent claims 25 and 39, adding Araujo to the Curry/Sistanizadeh combination still fails to suggest the claimed invention because Araujo focuses only on a point-to-point protocol.

None of the references, either alone or in combination, suggests the claimed central and local content servers, nor does the combination suggest transmitting content data between the servers over otherwise available bandwidth. As explained above, Curry focuses only on monitoring virtual paths between ITSs (not between a central and a local content server), and Sistanizadeh focuses on restricting the data between a

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client and a server (<u>not</u> on transmitting content data).
Incorporating Araujo would simply add a point-to-point
protocol without addressing the deficiencies in Curry and
Sistanizadeh. The Office Action therefore fails to
establish a prima facie case of obviousness with respect
to 9, 25, 31-40, 42-43 and 45, and withdrawal of the
rejection is respectfully requested.

Applicants thank the Examiner for allowing claims
18-24 and indicating that claims 7, 8, 10, 11, 26-30, 41
and 44 contain allowable subject matter. Applicants
note, however, that the cited art fails to disclose or
suggest any of the pending claims. Allowance is
therefore respectfully requested.

All objections and rejections having been addressed,
it is respectfully submitted that the present application
is in condition for allowance, and a Notice to that
effect is earnestly solicited.

Any fees associated with the filing of this paper
should be identified in any accompanying transmittal.
However, if any additional fees are required, they may be
charged to Deposit Account 18-0013 in the name of Rader,
Fishman & Grauer PLLC.

Respectfully submitted,

Dated: _09 January 2002_   By _____
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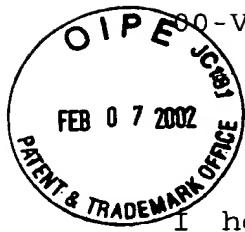
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CERTIFICATE OF MAILING

I hereby certify that the enclosed Amendment is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231 on this 9th day of _____JANUARY_____, 2002.

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